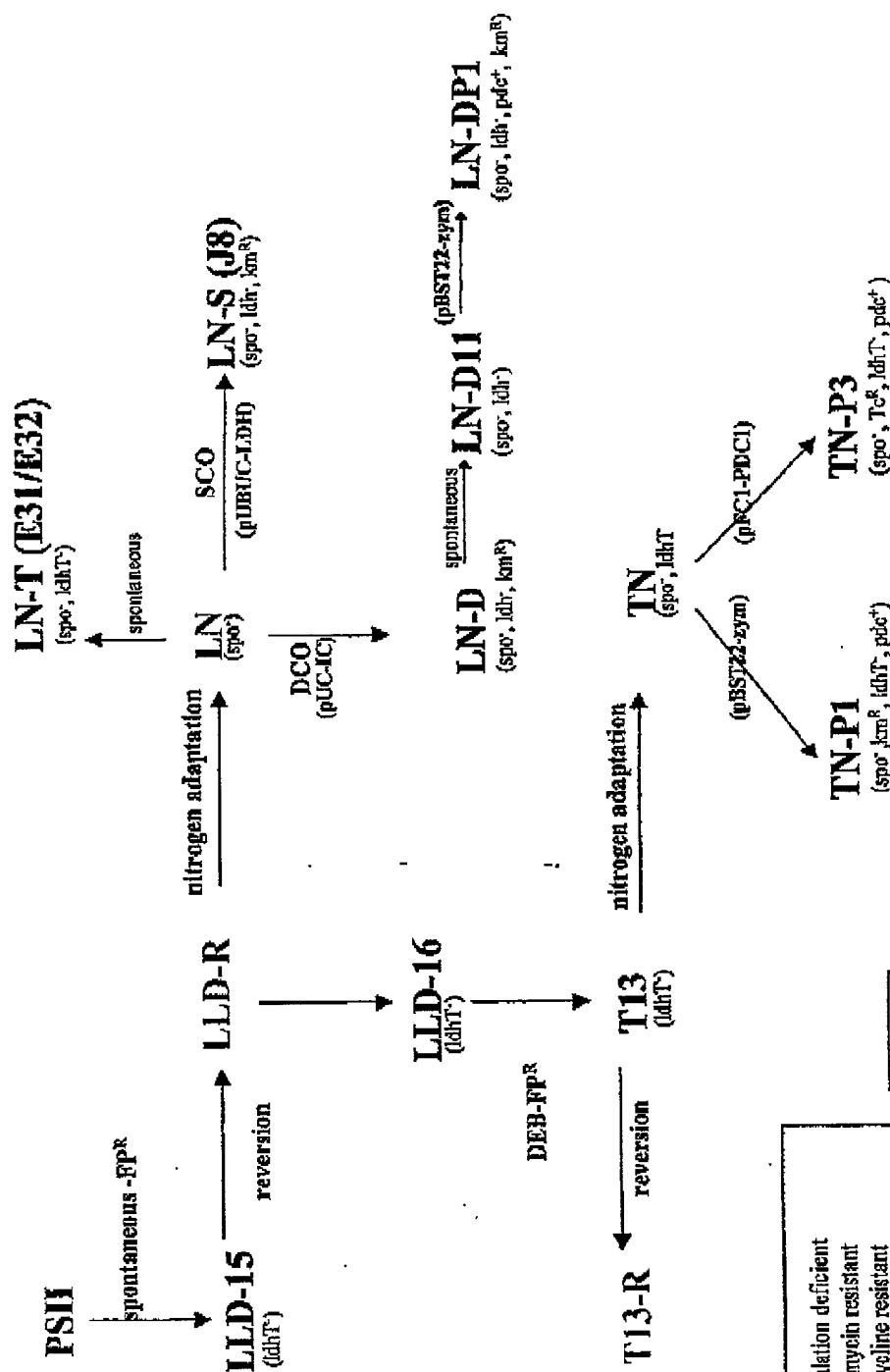


710

Figure 1

Ethanol Strain Development

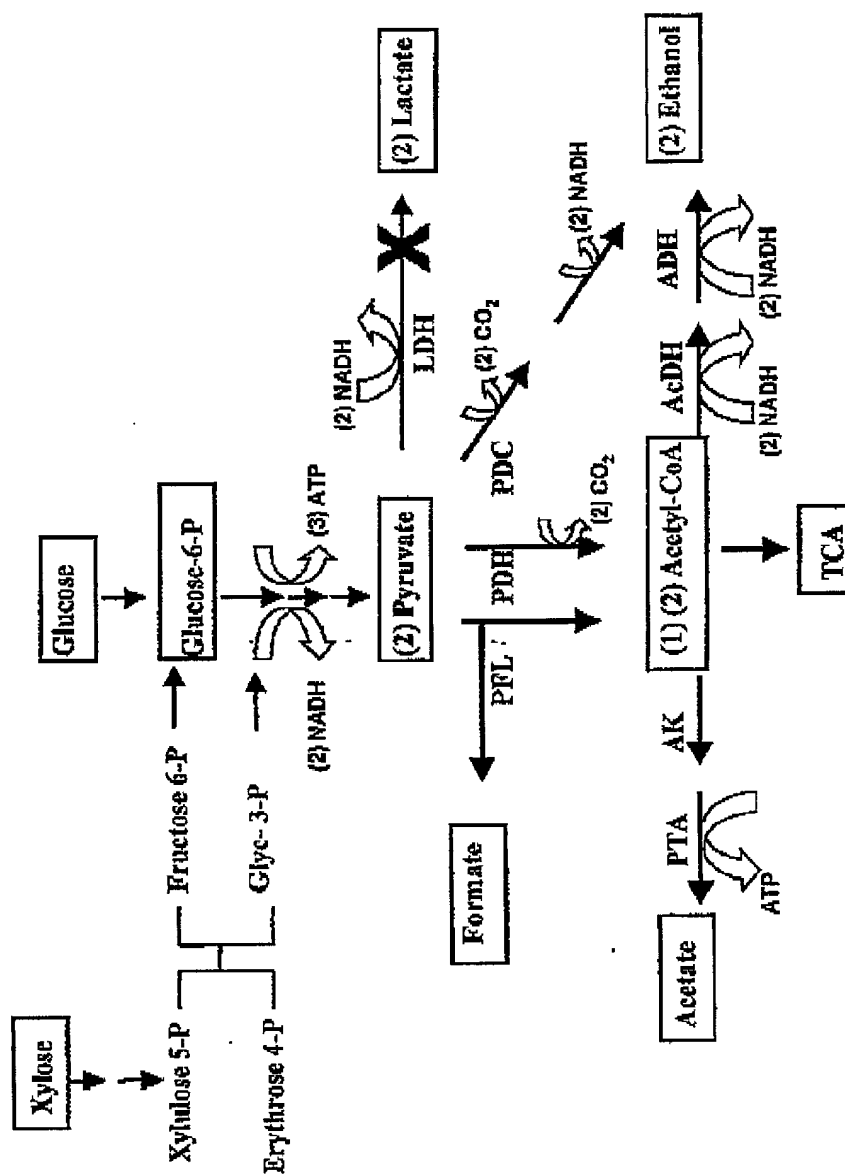
ethanol
lactate

spo⁻ sporulation deficient
 km^R kanamycin resistant
 Tc^R tetracycline resistant
 ldh⁻ LDH recombination mutant
 ldhT⁻ LDH transposon mutant
 pdc⁺ pyruvate decarboxylase positive

2/10

Sugar Metabolism to Ethanol

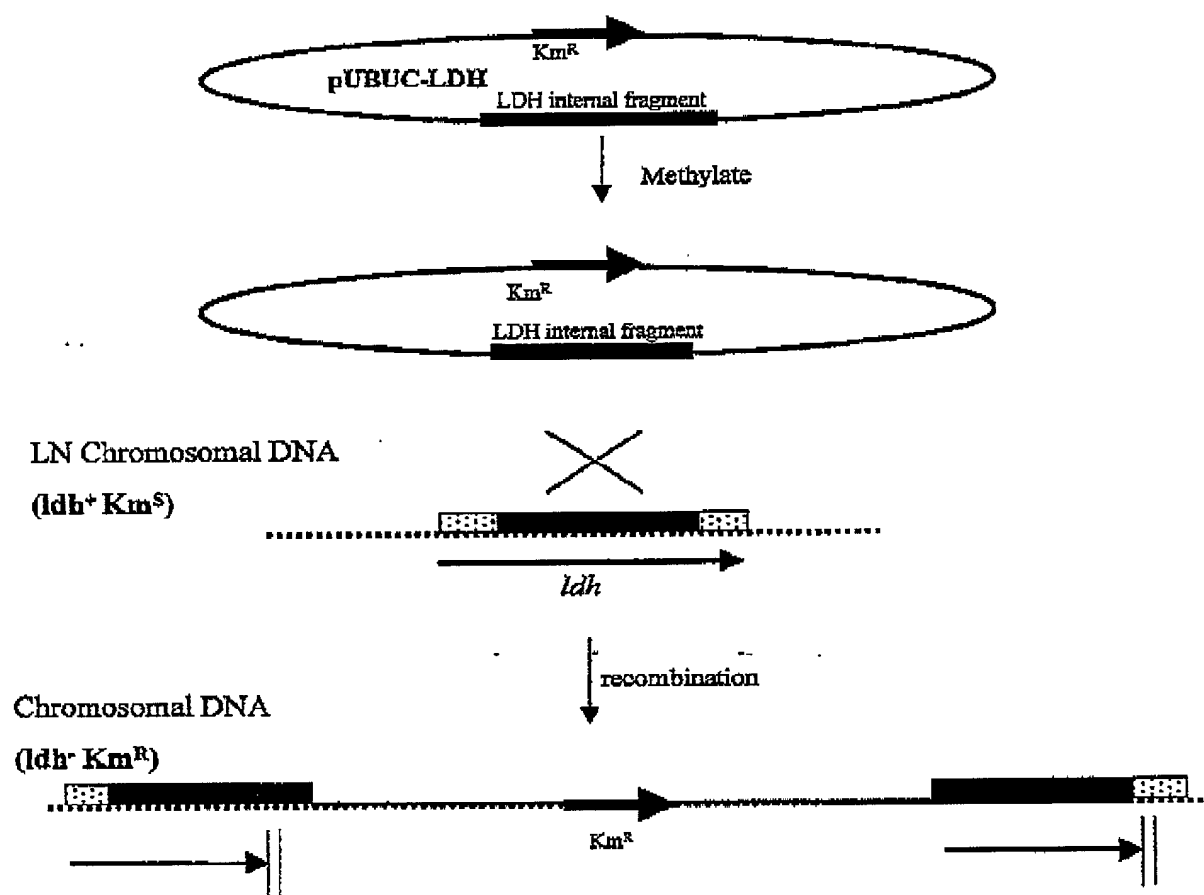
Figure 2



3/10

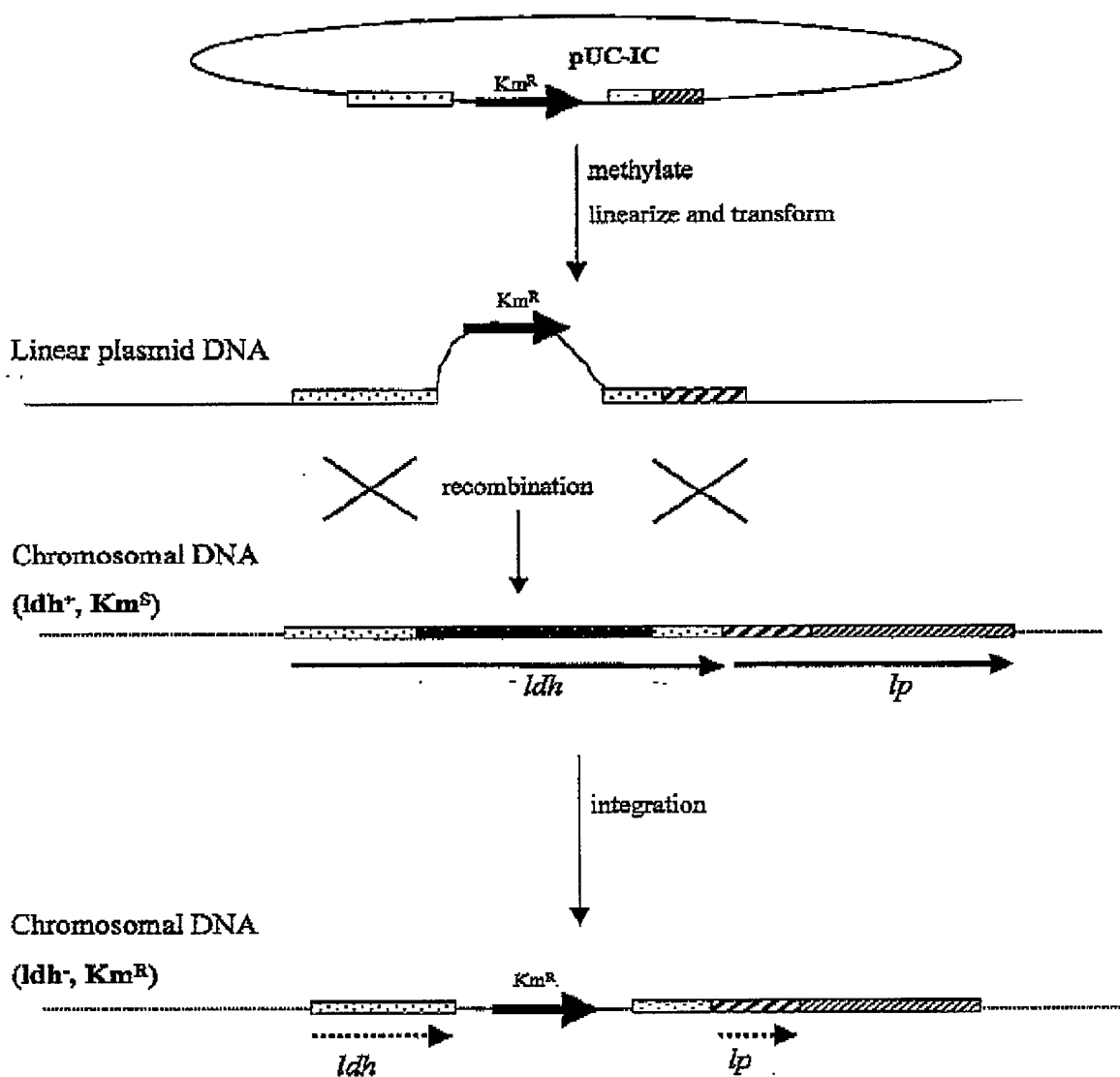
Figure 3

LDH Gene Inactivation by Single-Crossover Recombination



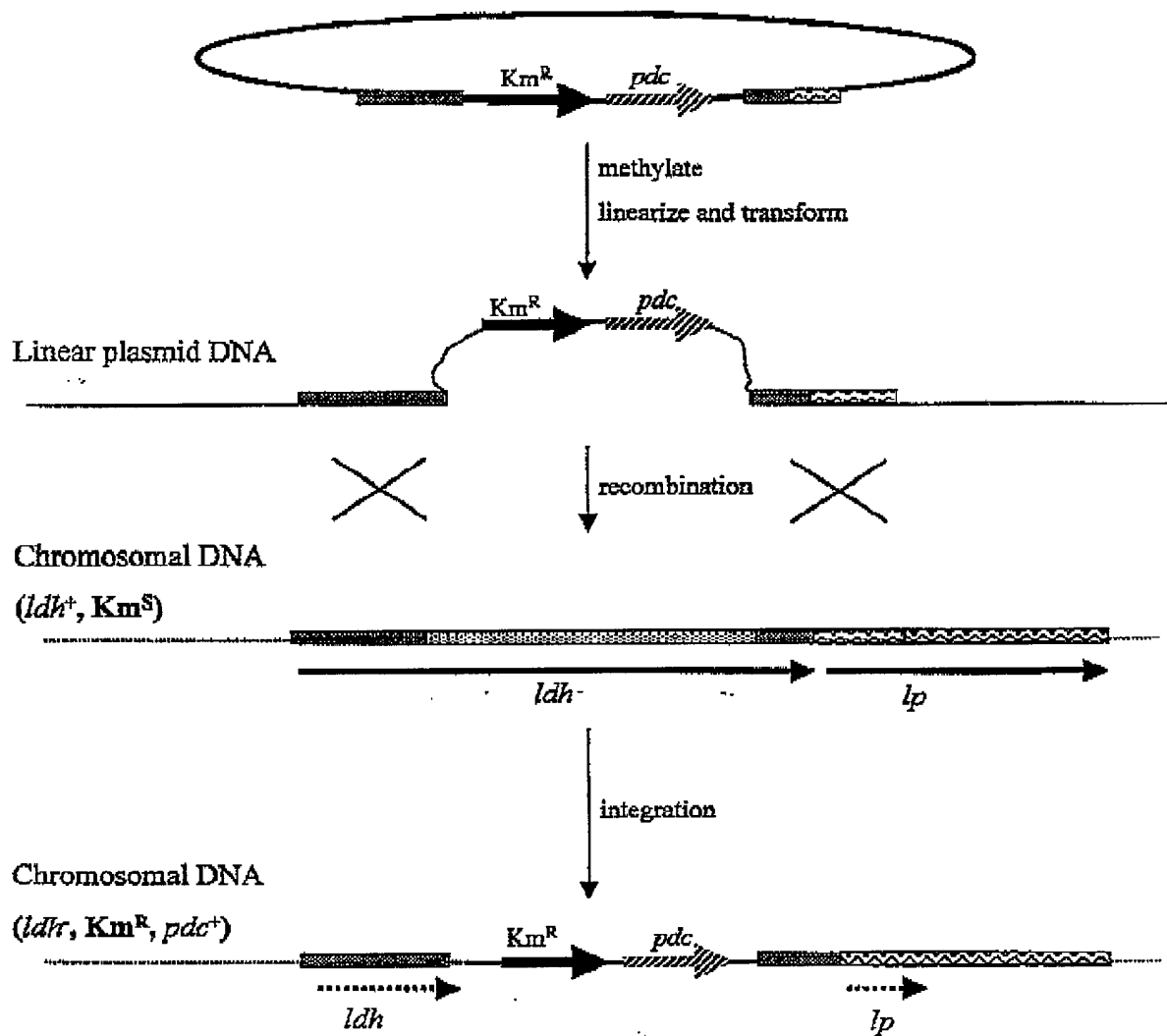
4/10

Figure 4

LDH Gene Inactivation by Double-Crossover Recombination

5/10

Figure 5

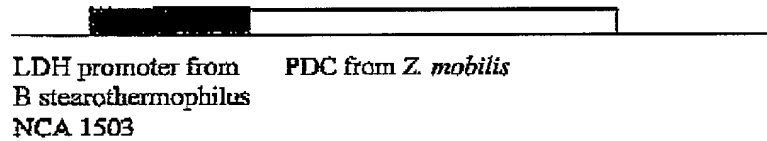
LDH Gene Inactivation and Heterologous *PDC* Gene Expression

6/10

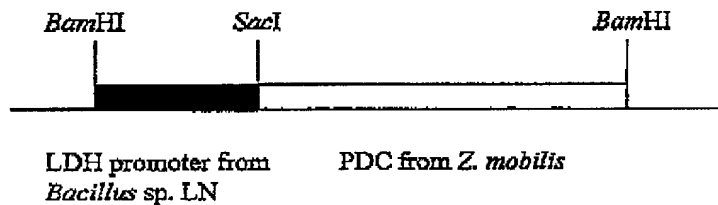
Figure 6

Expression of PDC

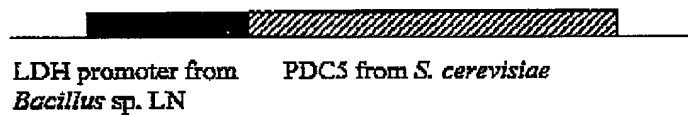
Construct 1 (cloned in pBST22)



Construct 2 (cloned in pFC1)



Construct 3 (cloned in pFC1)



7/10

Figure 7. LDH promoter sequence from *Bacillus* LN

AGGGCAATCTGAAAGGAAGGGAAAATTCCTTTCGGATTCTCCTTTTAGTTATTTTATGG - 60
GCACTCAATATTATATAGGCATTACGGAAATGATAATGGCAGAGTTTTTTCATTTATTAG - 120
ACTGCTTGATGTAATTGGATGTGATGATACAAAATAATGTTGTGTAAACAAAATGTTAA - 180
CAAAAAGACAAATTTCAATTCATAGTTGATACTTCATAAAGATTGTGAAATAATGCACAA - 240
TATATCAATGTATGAGCAATTTTCAAAATTCATTTTTTGGAAAGGATGACAGACAGCG*AT - 300

G

underlined: putative promoter sequences

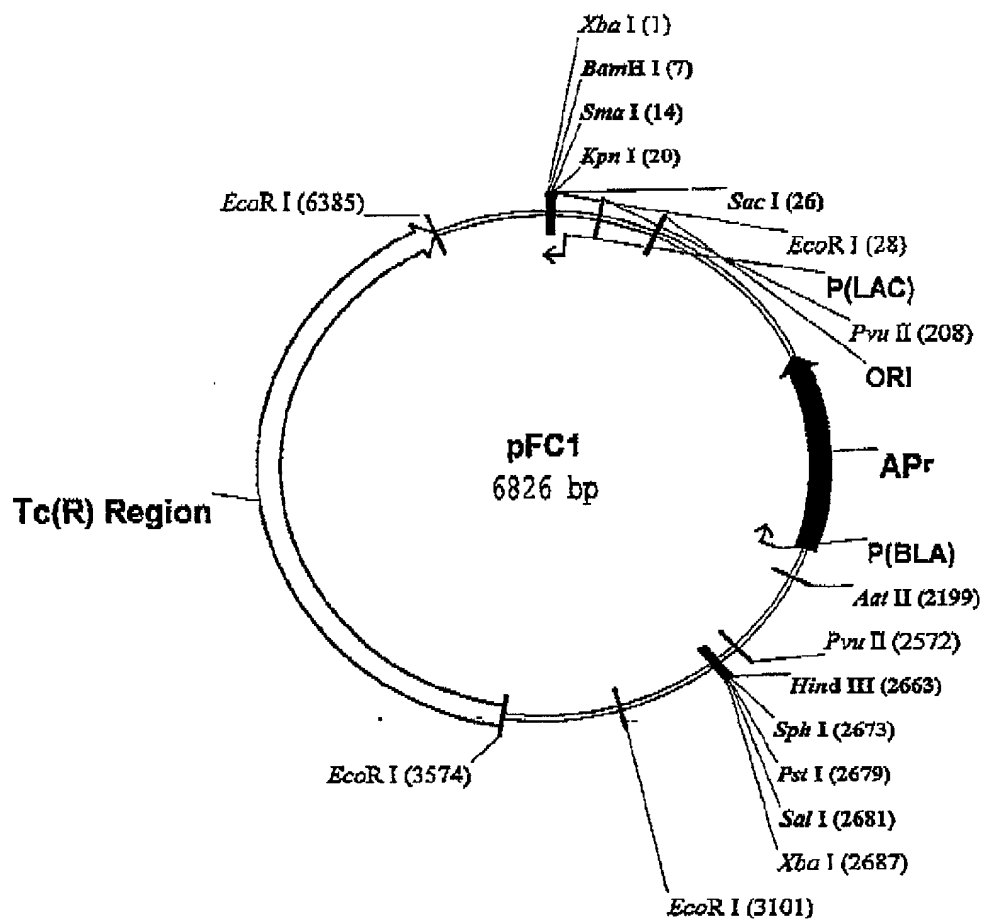
bold: putative ribosome binding site

*: start codon

Downloaded from www.aspenpub.com

8/10

Figure 8



9/10

Figure 9

